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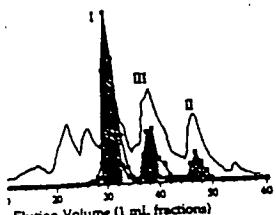


FIGURE 1

C fractionation of heparin lyases. The protein line. The activity (unit/ml) toward heparin (●) and toward heparan sulfate (■) are shown with the cross-hatching indicates the portion of the peaks that were collected.

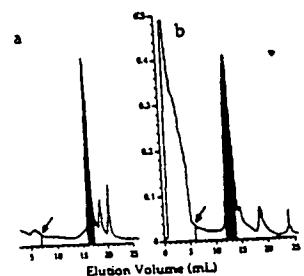


FIGURE 2

FPLC fractionation of heparin lyases. a, heparin lyase I; b, heparin lyase III. The arrow indicates the start of elution, and the cross-hatching indicates the portion of the peaks that were collected.

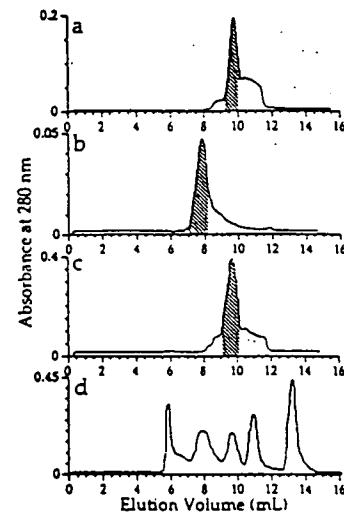


FIG. 3. GPC-HPLC fractionation of heparin lyases. a, heparin lyase I; b, heparin lyase II; c, heparin lyase III; and d, molecular weight standards ( $M_r$ ) consisting of thyroglobulin (bovine, 670,000), gammaglobulin (158,000), ovalbumin (44,000), myoglobin (horse, 17,000), and cyanocobalamin (1350). The cross-hatching indicates the portion of the peaks that were collected.

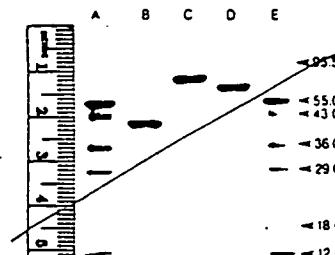


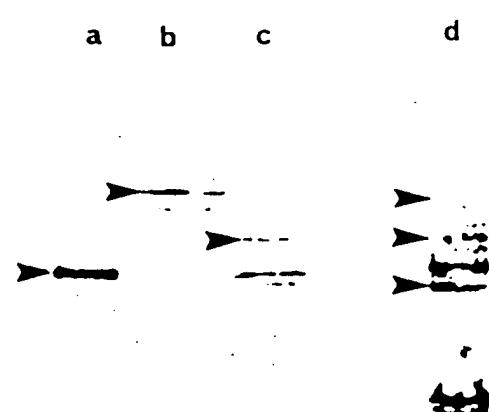
FIG. 4. SDS-PAGE in a 12% discontinuous polyacrylamide gel under reducing conditions. Two  $\mu$ g each of heparin lyase I (lane a), heparin lyase II (lane b), heparin lyase III (lane c), and molecular weight standards (lane d). Shown to the right are the mass of the molecular weight standards in kDa.

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A

a b c



B

a b c d

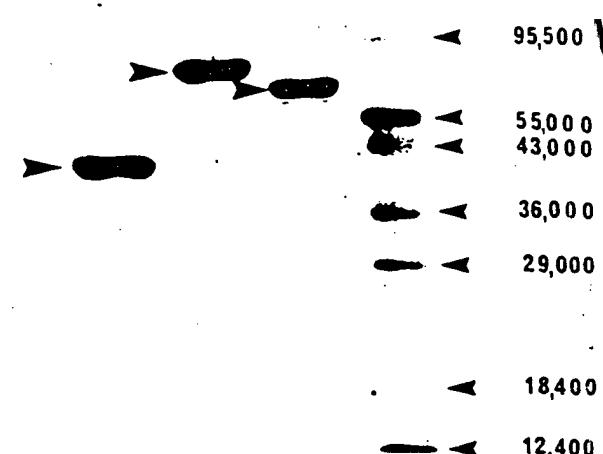


FIGURE 5A

FIGURE 5B

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FIGURE 6A

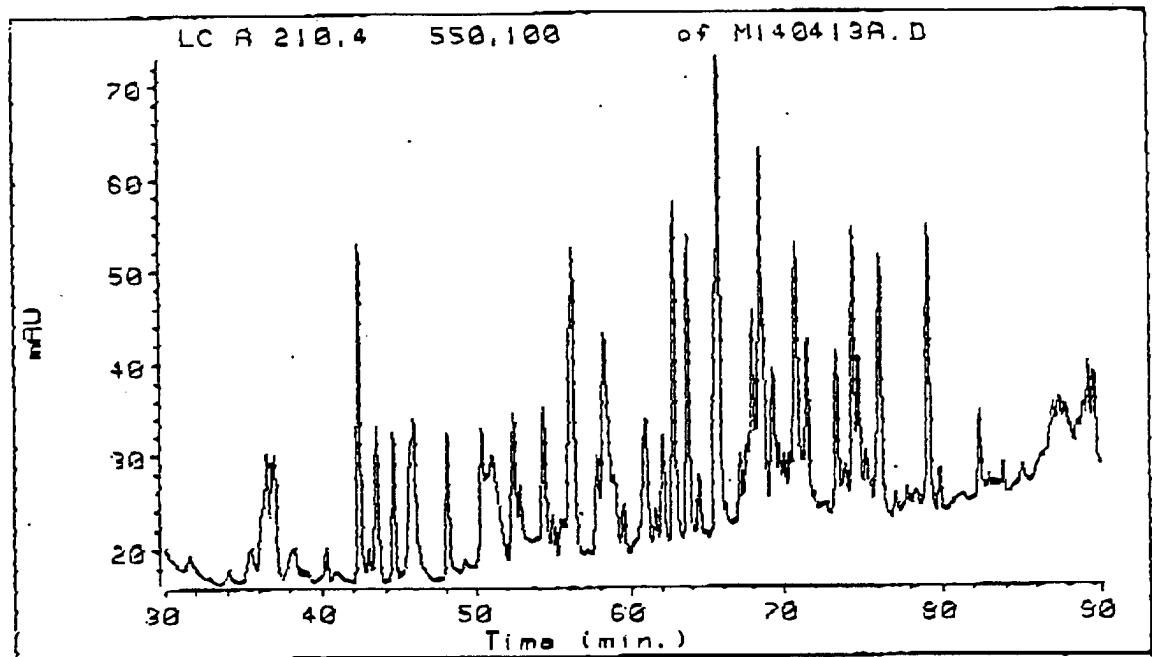
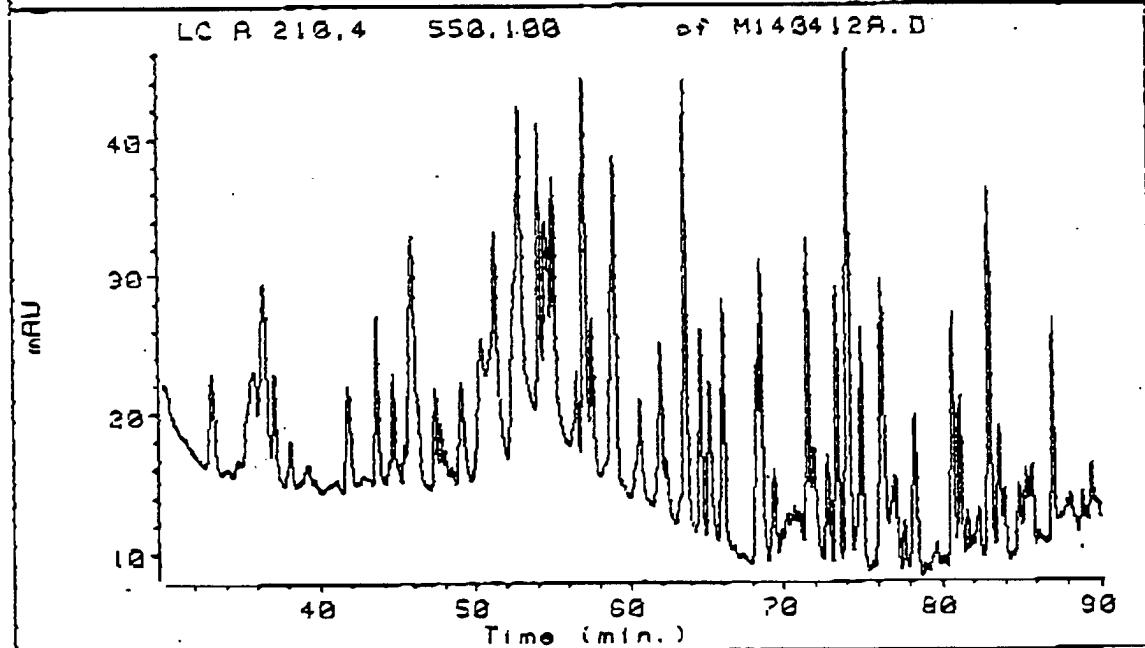


FIGURE 6B



Tryptic maps of heparinase II (top) and III (bottom).